Despite these obstacles, we have a duty to know, as best as we can, how New York's telecommunications infrastructure varies across regions in the state, how it compares with the rest of the world, and how effective competition is in providing services demanded by consumers. This will only be accomplished by continuing the infrastructure monitoring efforts currently being undertaken by the Department.

We expect staff to access and utilize whatever pertinent information is available from the Federal Communications Commission information systems, case files, and reports; to survey the trade journals; to review Bellcore publications for relevant infrastructure information; and to request New York State's local exchange companies to file specific data along with their annual construction budget filings. Efforts during the past two years to obtain data directly from other state commissions, out-of-state telephone companies, and countries have produced limited useful information, so these avenues should continue to be pursued only as and when judged likely to be productive.

Staff will be expected to continue to gather as much information as possible about the deployment of network technologies, capabilities, and services across regions within New York State and in other states and nations and to synthesize and report this information to us. Staff should also attempt to improve upon its past infrastructure monitoring efforts by gathering service quality data for out-of-state companies and correlating this information with investment expenditures, technology deployment, and service availability.

Finally, pursuant to Section 644.3 of the rules, every local exchange company is required to file construction budget information, including infrastructure information, by March 31 each year. The rule authorizes the Director of the Communications Division to specify the data that each company should file, and the Director communicates this information via annual letters to companies every December. This is our primary source of infrastructure monitoring information.

To ensure that the monitoring information is as complete as possible for the whole state, new entrants also should be required to file similar infrastructure information, including some construction budget information. We understand that new entrants may consider some or all of such information to be competitively sensitive, and we will employ available procedures for protecting information that truly is.

Competition Monitoring

We must monitor the development of competition during this transition period. This information will provide valuable evidence of the success or failure of our policies and provide a guide as to those markets where regulatory attention is most likely required or where regulation can be relaxed. Specifically, our ongoing assessment of competitive developments should be designed to:

1) monitor the extent to which competition has developed in various markets in New York;

2) assess the competitive effectiveness of the markets in meeting our fundamental objectives;

3) evaluate the impact on consumers of changing market conditions; and

4) assist in the determination of future regulatory modifications or enhancements.

To meet the four goals outlined above, we will need to collect a variety of data, some from the market participants themselves and some from other sources, such as consumers. Other information that may be required to accomplish specific objectives identified in other parts of this proceeding (e.g., detailed cost data that may be needed for certain rate setting or revenue distribution purposes) are not included here.

To monitor competitive developments in various local exchange markets across the state, we will need to gather the following information: (1) data showing the extent to which competitive local services are offered and actually being used in each market area; (2) the availability and accessibility of desired capabilities, the technical quality of the services offered, and the nature of the provider's interaction with its customers; and (3) price levels and trends. While some of this information will be available from existing regulatory reports, some additional information gathering efforts will be required. Appendix 1 contains a more detailed specification of the information that we intend to use in connection with our competition monitoring effort.

We believe that the basic business activity information (e.g., customers, lines, usage, basic financial data) outlined in the Appendix, augmented by tariff information, service quality reports, complaint data, and infrastructure information will provide an adequate picture of the evolving status of local exchange competition without

unduly burdening any market participant.[1/] We will initiate the formal rulemaking process necessary to implement this monitoring program through a separate order.

CONCLUSION

The regulatory framework described herein is designed to balance the interests of new and incumbent local exchange companies and ensure requisite customer protections during the transition to a fully competitive telecommunications marketplace. To implement this framework we will adopt the policies and practices described in this order and initiate further processes to examine the several issue areas that warrant additional refinement and input.

The Commission orders:

1. The policy framework described in the body of this order is adopted for our regulation of local exchange carriers during the transition to a competitive local exchange market.

2. A transition period for all policies in this order that result in differential treatment of carriers is established, except as required under state and federal law. No later than July 1, 2000, we will seek comments on the need

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[1/] The above-described monitoring effort should provide an on-going base of information by which to judge the effectiveness of evolving local exchange service competition in various parts of the state. We have not attempted to pre-define a quantitative competition benchmark (i.e., a standard of demarcation at which regulation should change in response to a measured "amount" of competition). Such determination ultimately will be highly subjective and interested parties will be entitled to offer whatever evidence they choose to support their views on the effectiveness of competition in any market under consideration at any time.

to extend differential treatment or transitional proposals beyond
December 31, 2000.

3. All local exchange carriers are directed to file, no later than November 20, 1996, reports describing the steps they have taken to support mutual billing, billing data exchanges, other areas of joint cooperation, and the problems or successes resulting from those actions. Five copies of such report should be submitted to the Secretary of the Commission, Three Empire State Plaza, Albany, New York 12223-1350. Parties wishing to receive copies of such reports shall notify the Secretary in writing by no later than July 31, 1996. A list of such parties will then be served by the Secretary, and anyone submitting reports will be required to serve a copy on all parties on the list. Parties interested in filing comments on the reports will have until December 24, 1996.

4. The responsibility to grant or deny exemptions from service quality reporting requirements or to waive or require additional reporting requirements, as described in this Opinion, shall be delegated to the Director of the Communications Division.

5. This proceeding is continued.

By the Commission,

(SIGNED)

JOHN C. CRARY
Secretary

COMPETITION MONITORING

PENETRATION

Each local exchange provider should be required to report:

1. NXXs it has in use;
2. counts of access lines in service by service classification (e.g., residence, business, and private line);
3. customers (business, residence, and Lifeline) in each area; and
4. basic usage statistics in each area, including numbers of calls and minutes-of-use, sub-divided among local usage and intraLATA, interLATA and interstate toll and carrier access.

These data should be reported for each LATA and filed annually, and, to the extent economically reasonable, quarterly. Finer disaggregation (i.e., sub-LATA) may prove desirable where "pockets" of intense competition could be masked by large areas of little or no competition. Staff reports that industry representatives have indicated a willingness to work to develop such sub-LATA data if it becomes necessary. Requiring LATA-by-LATA reporting on a routine basis, seeking sub-LATA data only when the need is obvious, strikes a reasonable balance between the Commission's need for information and the cost to the industry of supplying it.

CAPABILITIES and SERVICE QUALITY

In a broad sense, "competitive effectiveness" refers to the adequacy of service and prices. "Service adequacy" refers to the availability and accessibility of desired capabilities, the technical quality of the services offered, and to the nature of the provider's interactions with its customers. Insight into the availability and accessibility of desired capabilities should be obtainable from the Commission's infrastructure monitoring efforts as described in the body of the Opinion and Order Adopting Regulatory Framework. Further information about service availability will be available through the tariffs that all carriers will continue to file. The Commission's service quality reporting and the Department's internal complaint statistics will provide an indication of the levels and trends of technical and customer service quality. These sources should provide a reasonable basis for assessing the adequacy of service during the transition to competitive local exchange markets.

PRICING

Tariffs (and associated effective price statements) will provide the primary source of information for evaluating price levels and trends. Although non-dominant local exchange carriers will not be subject to rate of return regulation, a company's rate of return is one indicator of the overall reasonableness of its prices. As discussed in the Opinion and Order Adopting Regulatory Framework, non-dominant local exchange providers will be required to file annual balance sheets and income statements for their New York State operations at the level of detail normally provided in shareholder reports or 10K filings.

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Petition of New York Telephone Company for Approval of Its Statement of Generally Available Terms and Conditions Pursuant to Section 252 of the Telecommunications Act of 1996; and Draft Filing of Petition for InterLATA Entry Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in the State of New York	Case 97-C-0271

AFFIDAVIT OF JACOB J. GOLDBERG ON BEHALF OF BELL ATLANTIC - NEW YORK

STATE OF VIRGINIA)
) ss:
COUNTY OF ARLINGTON)

Jacob J. Goldberg, being duly sworn upon oath, deposes and states as follows:

1. My name is Jacob J. Goldberg. My business address is 1095 Avenue of the Americas, New York, New York.

2. I am presently employed by Bell Atlantic and serve as President, Telecom Industry Services. My responsibilities include marketing, sales, and service to resellers, interconnectors, and other facilities-based carriers that obtain wholesale products from Bell Atlantic in New York and elsewhere.

3. The purpose of this affidavit on behalf of New York Telephone Company (Bell Atlantic-New York or BA-NY) is to supplement the record in Case 97-C-0271, pursuant to the Ruling Concerning the Status of the Record issued in that proceeding on July 8, 1997. This affidavit describes the nature and extent of local competition in New York State. The information contained in this affidavit has been gathered from publicly available sources, supplemented by customer information known to me that is presented on an aggregated basis. I have personal knowledge of substantial customer-specific information. I have not included it in this affidavit in order to protect the confidentiality of those BA-NY competitors that are also BA-NY wholesale customers. Nevertheless, while use of my personal knowledge would expand and solidify this summary of competitive activity, it would not change the fundamental conclusions that can be drawn from my descriptions.

PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND

4. I assumed my present position in August 1997 at the merger of NYNEX and Bell Atlantic. Prior to that time, I held various positions at NYNEX. From March 1996 to August 1997, I held the position of Vice President - Wholesale Markets. From July 1994 through February 1996, I was Vice President - Access and Network Interconnection Marketing; and from May 1989 through July 1994, Managing Director - Access Markets and Network Interconnection. Prior to that time, I served as Vice President - Tariff, Cost and Regulatory Matters for the National Exchange Carrier Association (NECA) (1987-1989); I was Director - Rate Development and Cost Analysis for NECA (1983-1987); Division Manager - Access Services at American Telephone and Telegraph (AT&T) (1981-1983); District Manager -

Revenue Matters at New England Telephone and Telegraph Company (August 1978 - May 1981); and prior to that I held various positions at AT&T, New York Telephone Company, and Wheeler Laboratories.

5. I received a Bachelor of Engineering (Electrical) degree in 1968 from City College of New York, and a Masters of Science (Electrophysics) degree from Polytechnic Institute of Brooklyn in 1972. I am a licensed professional engineer in New York State and the Commonwealth of Massachusetts.

INTRODUCTION

6. This affidavit describes the actively competitive local exchange market in New York. The successful operations of numerous CLECs in New York are additional proof that barriers to entry into the local market have been removed throughout the state, and the criteria of Section 271 for long-distance authority have been met.

7. While BA-NY's service area stretches across the state, encompassing over 27,000 square miles,[1] most of its telecommunications customers and revenue comes from the New York metropolitan area.[2] Although the New York metropolitan area represents only 12 percent of the geographic area served by BA-NY,[3] it accounts for nearly 75 percent of the buying power[4] and

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[1]Claritas, Local Exchange Carrier database.

[2]In the interest of uniformity, I have defined the "New York metropolitan area" or "New York metro area" as equivalent to LATA 132, excluding the small portion of Connecticut that is included in the LATA. The term thus includes the five boroughs, all of Long Island, Westchester County, Rockland County, and a substantial portion of Putnam county. When referring to the entire state, I use the term "New York."

[3]Claritas, Local Exchange Carrier database.

[4]Claritas, Local Exchange Carrier database; Buying Power Index, MapInfo market database.

contains nearly 70 percent of its retail establishments.[5] The area accounts for 80 percent of BA-NY's total local business revenue[6] and contains 70 percent of BA-NY's residential population.[7] This concentration of business led CLECs to target this area first, and they continue to invest heavily there. While local competition is well established in virtually every area of the state where concentrations of business and residential customers can be found, the New York metropolitan area, in particular, is universally recognized by regulators, market analysts, and telecommunications providers as the most developed and competitive in the world. **Goldberg Exhibit 1.**

8. By February 1996, when the Telecommunications Act of 1996 was signed into law, BA-NY already had interconnection arrangements with several CLECs in New York.[8] BA-NY has since negotiated new agreements with several of these parties and signed agreements with companies that were not previously interconnected. Today, BA-NY has interconnection agreements in place with 18 different competitors including AT&T, MCI, and Sprint.[9] Of these, 14 have been approved by the NYPSC; 3 are pending approval and one is to be filed. **Goldberg Exhibit 2.**

9. The competitive significance of these arrangements cannot be overstated. Interconnection usually occurs within a BA-NY central office at a collocation node. The extent

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[5]Claritas, Local Exchange Carrier database; MapInfo market database.

[6]Memorandum Opinion and Order, The NYNEX Telephone Companies Petition for Waiver Transition Plan to Preserve Universal Service in a Competitive Environment, 10 FCC Rcd 7445, 7458 (1995).

[7]Claritas, Local Exchange Carrier database; MapInfo population database.

[8]BA-NY had signed at least 6 interconnection agreements by the middle of 1995. Communications Daily, June 7, 1995, at 7.

[9]In addition, BA-NY has signed post-Act interconnection agreements with 10 different wireless providers.

and locations of collocation nodes are important measures of competitive presence because a CLEC collocated in a BA-NY central office has direct access to every local loop connected to that central office. At present, BA-NY competitors have accepted delivery of 100 collocation nodes. Twenty-five more nodes are complete and awaiting CLEC acceptance, and another 7 nodes will be completed in the next few months. By the end of 1997, these arrangements will make some 2.4 million BA-NY business lines (nearly 55 percent of all BA-NY business lines in the state) and nearly 1.4 million residential lines (just under 20 percent)[10] directly available to competitors who can then purchase loops on an unbundled basis from BA-NY while using their own switches and switch peripherals to provide profitable calling plans and vertical services, such as Call Waiting and Caller ID.[11] BA-NY's competitors understand the importance of this expansion in CLEC capability and have made interconnection and collocation an important part of their announced entry strategies.[12]

10. Local competition is firmly established in New York and growing rapidly. **Goldberg Exhibit 3.** Some 25 companies currently resell BA-NY's local products,[13] serving

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[10]These access line figures are limited to BA-NY business and residential access lines only and do not consider significant quantities of access lines, private lines, and dedicated facilities provided by CLECs themselves to offer transport and local switching services to numerous customers.

[11]CLECs recently began targeting for collocation wire centers that provide access to a disproportionately larger base of residential customers. A comparison of the collocation cages that are currently ready for CLEC acceptance versus the existing collocation nodes yields a large increase in potential reach to residential customers. This trend is expected to continue as facilities-based CLECs increasingly target the residential market.

[12]As Richard Kozak, former President and Chief Executive of American Communication Services, Inc. explained, "By connecting to all of the key Bell central offices . . . we're able to sell to literally every single business customer in the addressable market." Transcript of conference call sponsored by The Chicago Corporation, Dec. 12, 1996, at 5. MCI recently noted, "It is clear . . . even which end offices to pursue," stating that 80 percent of local traffic is carried by 16 percent of end offices. Nate Davis, Senior VP, Finance and Local Operations, MCI, "MCI and the Local Market Opportunity."

[13]Stephania H. Davis, *Education or Excoriation? MCI Takes a Step Forward and, Some Say, a Step Down*, Telephony, Aug. 18, 1997

just over 100,000 lines, a number that has increased five-fold since January of this year. **Goldberg Exhibit 4.** Companies interconnected to BA-NY's network use more than 100,000 interconnection trunks, more than double what they used at the beginning of 1997. **Goldberg Exhibit 5.** These interconnection trunks carried almost 700 million minutes of traffic between BA-NY's and CLEC networks in August, again nearly double the amount of traffic carried in the first month of this year. **Goldberg Exhibit 6.**

11. Though it is impossible for me to know precisely how many customers are served by CLEC networks, minutes of use (MOUs) exchanged between BA-NY's network and CLEC networks allow me to estimate these numbers. In August 1997, roughly 95 million MOUs were carried on calls that originated on CLEC networks, while there were another 580 million MOUs on calls originating on BA-NY's network. The first category of MOUs was most likely attributable to voice calls since most competitive networks use BA-NY's network for the termination of such calls. The average voice line carries 500 MOUs of local calling each month. If I then divide 95 million MOUs by 500 (average use per line), I can estimate that, in New York, CLECs are providing voice dial tone to roughly 190,000 lines on their own networks.

12. I can then turn to the second category of calls, those that originate on BA-NY's network and terminate on CLEC networks. Use on those lines totaled 580 million MOUs in August. A portion of these minutes is already accounted for: a typical customer will make the same number of calls (s)he receives. Therefore, in order to estimate customers, the 95 million MOUs used above should be subtracted from the 580 million total, leaving 485 million MOUs per month originating on BA-NY's network and terminating on CLEC facilities. These calls appear to be predominantly data calls; many of BA-NY's largest local competitors are also

Internet Service Providers (ISPs) and operate their own Internet backbones.[14] Lines used primarily for Internet access are used, on average, some 10,000 minutes a month. If I divide 485 million (MOUs per month) by 10,000 (average use per line), I can estimate that CLEC networks serve an additional 48,500 lines. Taken together, I estimate that CLECs are currently serving some 238,500 access lines in New York. **Goldberg Exhibit 7.** This makes a total of approximately 326,000 lines controlled by CLECs at the end of August, compared to 141,000 at the beginning of the year. **Goldberg Exhibit 8.**

13. What the foregoing numbers show is that significant competition is occurring in the New York local exchange market today. The activities described in this affidavit are not merely plans for the indefinite future, nor are they simply the posturing of companies seeking to bolster their stock prices. This competition is well entrenched, and it is here to stay.

14. New York CLECs have already poured millions of dollars into the state and will continue to do so, maintaining and expanding competitive infrastructures that will be used to serve local exchange customers for decades to come. The market has recognized the value of the companies pursuing these opportunities. The prices of CLEC stocks have skyrocketed and are

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[14]MFS/WorldCom, for example, operates what many consider to be one of the largest backbones, UUNet, in the country. Pre-merger (with CompuServe and ANS) UUNet alone claimed to carry "35 percent to 40 percent of U.S. data traffic on the Net." *Internet Order Bolsters Ascend*, San Francisco Examiner, Apr. 25, 1997, at B1; *see also* David Bowermaster, *WorldCom Bulks Up*, MSNBC, Sept. 15, 1997, http://www.msnbc.com/news/108831.asp ("WorldCom Inc. already sports the busiest Internet network of any company on the planet."); *UUNet Technologies To Cut Off Free Connections To Its Internet Backbone*, Business Wire, Apr. 25, 1997 (UUNet is "one of the four largest providers of backbone service"); J. Marshall and J. Swartz, *Net Service Providers Facing Fees from UUNet*, San Francisco Chronicle, Apr. 25, 1997, at C1 ("UUNet is one of about seven large ISPs that control the main thoroughfares of the information superhighway."). MFS/WorldCom also operates five of the eleven major Network Access Points (NAPs) interconnecting the Internet. J. Rickard, *Internet Architecture*, Boardwatch Magazine Directory of Internet Service Providers, July/Aug. 1997, at 8-9.

now near their all-time highs.[15] The price of WorldCom stock increased nearly 50 percent between May and November, 1997.[16] Similarly, the price of TCG stock increased by almost 125 percent between April and November, 1997.[17] WinStar stock has risen by nearly 145 percent from May to November, and the price of Brooks Fiber stock more than doubled during the same period.[18] In December 1996, WorldCom acquired MFS for $14 billion.[19] In October 1997, WorldCom continued to expand by offering to buy Brooks Fiber for approximately $2.9 billion.[20] In October 1996, TCG announced its acquisition of Eastern Telelogic, the prominent facilities-based CLEC in Philadelphia, for $223 million.[21]

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[15]Stock histories generated from Yahoo! Finance, http://quote.yahoo.com/q?symbols (downloaded Nov. 3, 1997).

[16]Yahoo! Finance, http://quote.yahoo.com/q?symbols (downloaded Nov. 3, 1997). In its 1997 "Shareholder Scoreboard," the Wall Street Journal ranked WorldCom number one in the telecommunications industry in return to shareholders over the past ten years. WorldCom, Investor Relations, http://www.wcom.com/investor/investor.html (downloaded Oct. 16, 1997). Every dollar invested in WorldCom at the end of 1989 was worth more than 20 by 1996. WorldCom, 1996 Annual Report 7 (1997).

[17]Yahoo! Finance, http://quote.yahoo.com/q?symbols (downloaded Nov. 3, 1997).

[18]Yahoo! Finance, http://quote.yahoo.com/q?symbols (downloaded Nov. 3, 1997).

[19]*First of a New Breed of Telecoms Operator: MFS WorldCom Is Set to Spark an Industry Shake-Out*, Financial Times (London Edition), Aug. 28, 1996, at 23. After the merger, one analyst commented, "With established local service facilities and networks in place, WorldCom will be able to offer local service at higher initial margins than possible as a stand-alone entity." R.V. Bolen, J. C. Bradford & Co., Co. Rpt. No. 1827558, WorldCom, Inc., at 7 (Jan. 7, 1997).

[20]Brooks Fiber Press Release, *WorldCom to Acquire Brooks Fiber Properties in $2.9 Billion Tax-free Transaction*, Oct. 1, 1997. According to WorldCom CEO Bernard Ebbers, "The added networks and switching capacity will greatly benefit WorldCom." WorldCom Press Release, *WorldCom and Brooks Fiber Announce Merger*, Oct. 1, 1997.

[21]TCG Press Release, *TCG to Acquire Eastern Telelogic Corporation, Philadelphia's Largest Competitive Local Carrier, and Complete its Northeast Corridor Expansion*, Oct. 23, 1996. At the time of the merger, Bob Annunziata, President and CEO of TCG said, "Our acquisition of . . . ETC underscores our basic growth strategy: we'll either build our own networks or develop a relationship with another company that leads to its acquisition by TCG."

COMPETITIVE ENTRY

15. There are several ways that CLECs compete with BA-NY in New York. Some CLECs are pure resellers, often bundling local service with other services (like long distance or cable TV) into a package that consumers find attractive. Others provide switching services sold in combination with unbundled loops provided by BA-NY. Still others, like traditional Competitive Access Providers (CAPs), provide high capacity transmission facilities but rely on incumbent carriers for at least some of their switching needs. These are not mutually exclusive strategies. Many companies began as resellers but are now full, facilities-based carriers. Today, many CLECs offer facilities-based services where it is economically feasible and use resale to fill gaps in coverage or to test new markets.

Resale

16. Resale presents a low-cost, low-risk way of entering the local exchange business. CLECs can use resale to enter the local exchange business with virtually no capital or self-provided infrastructure investment. The availability of resale provides an opportunity that would otherwise be unavailable for new entrants to build a customer base before making more significant contractual or investment commitments. CLECs may also use resold local services to complete a bundle of other telecommunications services.

Switching

17. The local switch not only manages the routing of calls through the network but also provides the end user with value-added features and functions. It is the switch that recognizes when the phone is taken off the hook and provides dial tone so a customer knows that (s)he can place a call, and it is the switch that sets up the call path. The switch can also provide

features such as Call Waiting and Caller ID, and will soon serve as the platform for new Advanced Intelligent Network (AIN) features such as voice response, advanced conferencing services, and customized call distribution and message treatment. As a result, one way that competitors will likely strive to differentiate themselves is through basic and value-added switching features.

18. New entrants can provide these powerful switching capabilities themselves. In particular, because transport costs are low and declining, switches do not have to be in close proximity to a customer to provide local exchange service, and entrants can use a relatively small number of switches and still compete effectively in a fairly large area.[22]

19. To protect competitively sensitive information, the switch quantities and locations used in this affidavit come from the publicly available Local Exchange Routing Guide (LERG) database, maintained by Bellcore.[23] The LERG is based on information that is provided to Bellcore by incumbent and competitive local carriers. LERG switch counts do not always agree with counts from other sources, including public statements by the carriers themselves. Some of these discrepancies are due to the blurring of definitional lines between switching entities and rate centers. The bright line that once distinguished central office switches from other switching equipment has been fading as a new generation of remote switches and remote digital terminals (RDTs) have emerged with limited switching capabilities.

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[22]One market analyst estimates that fiber-based CLECs can serve a 125-mile radius area with a single switch. *Intercom Group, MFS Gains Strong Buy Recommendation From Investment House*, Fiber Optics News, Feb. 26, 1996 (citing Deutsche Morgan Grenfell Investment House report).

[23]Bellcore, TR-EOP-00315 LERG CD-ROM, Local Exchange Routing Guide (Aug. 1, 1997) (*LERG*).

20. According to the LERG, BA-NY competitors have deployed 85 switches in BA-NY's service area.[24] While the majority of these switches are reported in the New York metropolitan area, by at least 11 separate CLECs,[25] competitive switching is reported throughout the state, in areas not normally considered targets for early entry.[26]

Transmission

21. Well before passage of the Act, CAPs were providing access to interexchange carriers over their own fiber optic networks. In 1985, TCG (then known as New York Teleport) became the nation's first CAP. Since then, CAPs have been transformed into CLECs, extending their networks, installing switches, and offering a full array of local services. These carriers have deployed their networks in virtually every area where concentrations of business and residential customers can be found.

22. These fiber optic networks obviously can serve customers that are directly along their routes. They can also be easily extended to serve customers in relatively close proximity.[27] A measure of a CLEC's addressable market must take these network extensions into account. Assuming that CLECs can easily extend coverage to customers within one-half mile of their fiber

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[24]I have been able to confirm, through interconnection arrangements, some 27 of these switches.

[25]TCG, AT&T, MFS/WorldCom, Cablevision, RCN, MCI, Frontier, Time Warner, WinStar, ACC, and Brooks Fiber together have deployed 61 local switches in the New York metropolitan area.

[26]MFS/WorldCom operates a switch in Pawling, near Poughkeepsie. In Albany, there are 3 competitive switches: one operated by MFS/WorldCom, one by Hyperion, and one by ACC. Buffalo has four CLEC switches deployed by the same three companies (ACC owns two). There is one competitive switch, owned by Hyperion, in Syracuse. Hyperion has also deployed a switch in Binghamton. ACC has deployed another 15 switches in smaller towns throughout the state, such as Troy, Ithaca, and Niagara Falls.

[27]CLECs can extend their fiber rings to serve BA-NY's customers using a number of different methods, such as conventional copper or fiber drops from the rings to the customers' premises. Alternatively, a competitor could use wireless technologies to connect customers. Some wireless technologies, such as point-to-point microwave, are already available, while others are now being widely deployed for the first time.

rings,[28] I believe existing competitive facilities already provide a remarkable degree of market coverage. To find the number of buildings "passed" or within "reach" of competitive fiber facilities, a one-half mile "buffer zone" was created on each side of the fiber routes. All business offices, retail establishments, government buildings, apartment buildings, schools, and hospitals within that zone were then counted. These location data are from the U.S. Postal Service and represent the places where the Postal Service knows the specific name of the business or building.[29] Each business within a high-rise office building was counted separately; apartment buildings were counted only once.

23. Application of the one-half mile buffer zone discussed above shows that competitive fiber networks are positioned to serve a surprisingly large portion of BA-NY customers. In Manhattan, for example, deployed competitive fiber networks are capable of serving more than 98 percent of businesses. In the New York metropolitan area, these networks are within easy reach of over 70 percent of businesses. Similarly, in Syracuse, competitive fiber networks can reach 80 percent of businesses; in Buffalo, 16 percent; in Albany, 40 percent; and in Binghamton, 92 percent.

24. It is impossible for BA-NY to ascertain with any precision how much traffic is already traveling on these networks, let alone how many customers CLECs actually serve. CLECs do not divulge their customer lists, and the competitive fiber networks in New York have the capacity to carry huge volumes of traffic. The aggregate volumes of traffic are probably

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[28]*See* Joint Affidavit of Robert G. Harris and David J. Teece on Behalf of Ameritech Michigan, *attached to* Application of Ameritech Michigan Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Service, in Michigan, CC Docket No. 97-137 (F.C.C. May 21, 1997).

[29]Data taken from MapInfo New York StreetWorks database.

known only to the carriers themselves. Analysts estimate, however, that CLECs have taken approximately 60 percent of the private line business.[30]

25. Alone, or in partnership with others, New York's incumbent cable companies are among BA-NY's most significant wireline competitors. Cable systems in New York are said to include over 60,000 miles of cable plant and provide access to over 4.8 million homes.[31] In some franchise areas, cable operators report that their networks pass almost every home.[32] Cable television companies in New York are reportedly offering local telephone service and are continuing to upgrade their networks to expand their offerings of two-way, high-capacity, digital services, as well as traditional voice telephony.

Data Services

26. BA-NY faces serious competition today for local transport involving not just voice, but data as well. Data has become a very significant portion of all traffic carried over the telephone network, and data traffic is growing much more quickly than voice traffic.[33] Many of

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[30]Affidavit of Jerry A. Hausman, *attached to* Motion of SBC Communications, Inc. for a Waiver of the Modification of Final Judgement to Permit it to Provide Interexchange Telecommunications Services to Customers with Independent Access to Interexchange Carriers (citing Douglas Ashton, *Investing in the Emerging Telecommunication Industry*, Hancock Institutional Equity Services Special Report (Dec. 2, 1994)). *See also*, J. Kraemer, Deloitte & Touche, *Competitive Assessment of the Market for Alternative Local Transport*, at 5 (1991) (in the absence of significant competitive response by the telco, a CAP "can be expected to achieve a 40 to 50 percent share of the DS-1 and DS-3 markets in [its] geographical service area."); Ellis Booker, *Virtual Network Equals Savings*, Computerworld, Mar. 5, 1990, at 51 (according to a survey by the Yankee Group, only about half of all virtual private network customers opt for access through their local telco rather than using direct dedicated links to the interexchange carrier).

[31]About 4 million of these residences subscribe to basic service, a penetration rate of 85 percent. NCTA, Cable Television Developments 13 (Fall 1996).

[32]In Buffalo, for example, TCI passes 100 percent of homes; in Woodbury, Cablevision passes 95 percent. Warren Publishing, Television & Cable Factbook, D-1148, D-1199 (1996 ed.).

[33]*See, e.g.*, J.L. Barlage, et al., Smith Barney, Ind. Rpt. No. 1761069, Technology Topics, at 6 (July 9, 1996) (over the next five years, voice traffic will grow 4 percent a year, while data traffic will grow by more than 40 percent annually); D.J. Edmonds, et al., Bear, Stearns & Co., Co. Rpt. No. 2510862, Intermedia Communications Inc., at 3 (Sept. 13, 1996) ("packet-based services are forecasted to grow at 43 percent CAGR"); S.P. Conrad, et al.,

the voice, video, and wireless competitors discussed above have specifically targeted the data market. AT&T has announced plans to almost double its investments in business markets to meet the strong revenue growth offered by the data marketplace.[34] MCI, which began providing Internet service in 1994, reportedly has a $100 million Internet business today and expects this business to rise to $2 billion annually by the year 2000.[35]

27. In April of 1996, the nation's largest CAP, MFS, announced its purchase of UUNet Technologies for $2 billion.[36] According to MFS, the merger "significantly improves the ability of both companies to compete with regional and long distance carriers" in the Internet access market.[37] More recently, in September 1997, MFS/WorldCom announced a complicated stock and cash transaction in which it would acquire the Internet backbones of the two largest

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Deutsche Morgan Grenfell/C.J. Lawrence, Co. Rpt. No. 1773944, Teleport Communications Group, Inc., at 10 (Aug. 9, 1996) ("Companies like MCI have seen data traffic grow from 6 percent to over 10 percent of revenue in just two years, and it is quite feasible that data traffic volume will ultimately exceed voice traffic in terms of absolute volume."); *AT&T to Increase Business Market Investment*, Reuters Financial Service, Mar. 3, 1997 (according to CEO Robert Allen, "Over the next three to four years data traffic will surpass voice traffic on the network"). It is already estimated that the volume of data has surpassed the amount of voice traffic in the corporate market, with the increasing popularity of multimedia computer applications and the Internet increasing the pace of demand growth for such services. D.J. Edmonds, et al., Bear, Stearns & Co., Co. Rpt. No. 2510862, Intermedia Communications Inc., at 3 (Sept. 13, 1996).

[34] *AT&T to Increase Business Market Investment*, Reuters Financial Service, Mar. 3, 1997.

[35] Traffic on MCI's Internet network is increasing at a rate of 15 percent every month. MCI News Release, *MCI and the Internet*, Jan. 29, 1997.

[36] *Merger Creates New Hybrid of Internet, Phone Firms*, Associated Press, Apr. 30, 1996.

[37] *Merger Creates New Hybrid of Internet, Phone Firms*, Associated Press, Apr. 30, 1996. The two together will have a network connecting 543 Internet POPs; 7,400 buildings; 218 local exchange company central offices; 16 local/long distance switches; and 213,000 fiber miles. G. Lawyer, *MFS Leaps into Next Millennium with Acquisition of UUNet*, Local Competition Report, May 13, 1996, at 4.

Internet Service Providers (ISPs), America Online and CompuServe.[38] The combination would create a significant Internet network with more than one-half million dial access ports.[39]

28. Cable companies are also rapidly entering the data market.[40] The two most extensive cable modem services, Time Warner's Road Runner and TCI/Cox/Comcast's @Home, apparently have partnered with Web content developers who provide them with a faster network that supports new applications like continuous video.[41] Time Warner has announced that it is rapidly upgrading its New York metropolitan area franchises to full 750 MHz capacity[42] and has already tested a number of cable modems in its Manhattan system. On June 10, 1996, Lucent announced a multi-million dollar contract with Time Warner to manufacture specially-designed cable for deployment in Time Warner Cable's New York City network. The 50 miles of High Fiber Count AccuRibbon Cable will reportedly deliver high bandwidth, reliable cable TV, and telephony services in Manhattan.[43]

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[38]WorldCom Press Release, *WorldCom to Acquire CompuServe and AOL's Network Services Company, ANS Communications, in $1.2 Billion Internet Transaction*, PR Newswire, Sept. 8, 1997.

[39]WorldCom Press Release, *WorldCom to Acquire CompuServe and AOL's Network Services Company, ANS Communications, in $1.2 Billion Internet Transaction*, PR Newswire, Sept. 8, 1997 ("We think these moves position WorldCom and UUNet at the forefront of the Internet world," said John Sidgmore, WorldCom Vice Chairman and Chief Operations Officer, and UUNet CEO. "Not only will the transaction generate significant revenues, it will yield crucial economies of scale, which will augment our ability to compete with new Internet entrants, such as the RBOCs").

[40]By early 1997, 1.5 million homes nationwide were able to reach the Internet via high-speed cable modems. D.H. Leibowitz, et al., Donaldson, Lufkin & Jenrette Securities, Ind. Rpt. No. 2546034, Cable Industry Outlook '97, at 16 (Apr. 17, 1997).

[41]Time Warner planned to offer cable modem service to over 800,000 of its cable subscribers in Columbus, Ohio and Albany, New York by the middle of this year. Television Digest, Mar. 3, 1997.

[42]C.P. Dixon, PaineWebber, Co. Rpt. No. 2502573, Time Warner, at 1, 7 (June 17, 1996). *See also* M. Robichaux, *Time Warner Inc. Is Expected to Buy New Set-Top Boxes*, Wall St. J., Dec. 10, 1996, at B10.

[43]Lucent Press Release, *Lucent Designs Fiber Cables for Time Warner's New York City Project*, June 10, 1996.

29. After 18 months of testing, Cablevision rolled out its Optimum Online cable modem service in December 1996 to 15,000 homes in Oyster Bay.[44] The company has announced firm plans to offer service to over 150,000 homes in Long Island and Connecticut by the end of 1997.[45] The company predicts it will actually serve 5 to 10 percent of each market within 12 months.[46] Cablevision also announced its "plan for the Tri-State area" including the expansion of Optimum Online's high-speed data transmission services to area businesses, residents, and educational institutions, and the availability of its first HDTV channel which will deliver 3 times the screen size and resolution of analog television.[47]

30. Wireless data providers are also rapidly expanding their operations, driven by increased user demand for "anytime/anywhere" computing.[48] DBS satellite providers already

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[44]Jon Lafayette and Lee Hall, *Cablevision Takes Fast-Track to Online With Optimum*, Electronic Media, Jan. 2, 1997, at 14.

[45]Jon Lafayette and Lee Hall, *Cablevision Takes Fast-Track to Online With Optimum*, Electronic Media, Jan. 2, 1997, at 14.

[46]Jon Lafayette and Lee Hall, *Cablevision Takes Fast-Track to Online With Optimum*, Electronic Media, Jan. 2, 1997, at 14.

[47]Cablevision advertisement, N. Y. Times, June 11, 1997, at A26.

[48]The wireless data services market is expected to increase five-fold by 2001 from a revenue base of about $2.5 billion today. F. Blackwood, *Getting Unwired*, San Francisco Business Times, Dec. 20, 1996, at A14. These services include: sending, receiving, and manipulating messages; sending and receiving faxes; Internet and information services access; file transfer; remote access (for office workers); sending and receiving information from field workers (e.g., taxicab and trucking companies); remote inventory and diagnostic services; and credit card verification. *See* MultiMedia Telecommunications Association, 1996 MultiMedia Telecommunications Market Review and Forecast 174 (1996).

offer high-speed nationwide Internet downlinks to residences and businesses alike via pizza-sized dishes.[49] RAM and ARDIS offer data services over SMR frequencies in New York.[50]

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[49]Hughes' DirecPC data transmission service, for example, provides a 400 kbps Internet downlink via DBS transponders. Patrick Flanagan, *Hughes Unveils High-Speed Wireless Internet Product*, Telecommunications, July 1995, at 12.

[50]S. Velasquez, *ARDIS Service, From ARDIS*, Internetwork, July 1995, at 23; *Mobitex, from RAM Mobile Data*, Internetwork, July 1995, at 23. Many others have licenses suitable for more specialized types of wireless messaging, video, data, and paging. In the PCS narrowband spectrum, providers such as MCI, AirMedia, Ex Machina, and PageNet already offer or have immediate plans to offer two-way paging and one-way alphanumeric messaging in Manhattan. *The Manhattan of Spectrum Real Estate*, Wired, Apr., 1997; M. Moore, *2-Way Paging Goes Forward*, PC Week, June 2, 1997, at 128; G. Mannes, *Talk to Me; New Pagers Let You Listen to Messages Anywhere - and Send One Back*, Popular Mechanics, Feb. 1996, at 59; *CNN and Air Media Form Strategic Partnership to Provide "The CNN Channel" Over AirMedia Live*, Business Wire, Nov. 18, 1996.